

Amendment under 37 C.F.R. § 1.111
Application No.: 10/054,898
Attorney Docket No.: Q67951

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

PA 1-49. (Canceled).

50. (Previously Presented) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said first member comprises a protruding member formed on a surface thereof facing the ink chamber, said protruding member contacting the ink supply needle of the printing apparatus and said second member contained in said ink channel.

51. (Previously Presented) An ink supply system according to claim 50, wherein said first member comprises a hole through which ink flows, said hole being surrounded by said

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protruding rim, a diameter of said hole is smaller than that of the ink supply needle of the printing apparatus.

52. (Previously Presented) An ink supply system according to claim 50, wherein said second member comprises a surface facing said first member formed with a convex surface.

53-57. (Canceled).

58. (Previously Presented) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

- an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

- a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

- a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel upon moving up and down respectively in conjunction with the ink supply needle;

wherein said second member comprises a surface, facing said first member, provided with a notch, said notch having an angle defined in conjunction with the tapered angle of the ink supply needle.

59. (Currently Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

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an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;
a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and
a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;
wherein said second member comprises a guide body operably allowing said second member to slide substantially vertically with respect to said first member, said guide body operably suppressing a horizontal deviation of said second member and said guide body extending from said second member in a direction substantially parallel with said ink channel.

60. (Previously Presented) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;
a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and
a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;
wherein said second member comprises a guide rod extending along a direction to the ink chamber, and a guide unit fitting with said second member for allowing said second

member to slide along the direction of the sealing of said first member with said second member.

61. (Currently Amended) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber along an ink supply port to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus, said ink channel extending substantially straight to an interior of said ink chamber from said ink supply port;

a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; ~~and~~

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle; and

an internal opening for communicating the ink supply port to the ink chamber formed in said ink channel, and positioned right above the ink supply port,

wherein a direction of said ink channel is substantially the same direction as the direction of the sealing of said first member with said second member.

62. (Previously Presented) An ink supply system for a printing apparatus providing ink to a printing head through a tapered ink supply needle, said ink supply system capable of providing ink contained in an ink chamber to the print head through the ink supply needle, comprising:

an ink channel for providing ink from said ink chamber to the print head of the printing apparatus;

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a first member provided at said ink channel, forming a part of said ink channel for allowing a flow of ink, said first member sealing the ink supply needle of the ink printing apparatus by fitting therewith; and

a second member contained in said ink channel elastically abutting against said first member in a direction which is the same as a direction of the sealing by said first member with said second member, said second member selectively opening and closing said ink channel in conjunction with the ink supply needle;

wherein said second member comprises a surface, facing said first member, provided with a notch, said notch having an angle defined in conjunction with the tapered angle of the ink supply needle; and

wherein the angle of said notch is the same as the tapered angle of the ink supply needle.

63. (Previously Presented) The ink supply system according to claim 58, wherein the angle of said notch is smaller than the tapered angle of the ink supply needle.

64. (New) The ink supply system according to claim 61, further comprising a second ink chamber in which said second member is arranged to be slidable, wherein said first member includes a hole which is disposed coaxially with said second ink chamber.
